

[54] FLOW AND TIME PROPORTIONAL SAMPLING SYSTEM

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[57] ABSTRACT

A sampling system for drawing samples from a fluid flow which is responsive to manual actuation, predetermined increments of flow volume, or predetermined increments of time. The system includes a flow meter and a flow sampler interconnected and physically located in the vicinity of the flow being monitored. The flow meter converts the flow head to flow rate and subsequently to flow volume. The head to flow conversion is mechanical and provides for flow measurement through a flow channel having a given cross section shape over a wide range of shape sizes by means of an electrical adjustment. The flow meter provides for flow measurement through flow channels having varying cross section shapes by means of selectively engaging a predetermined one of a plurality of cams designed to convert head to flow is being measured. The sampler is electrically connected to the flow meter for use in the sample per flow volume mode and provides for a constant volume sample which is independent of flow head, sampler height above the flow surface, power source voltage level, pumping time or any of the other variables which heretofore affected the sample volume. Automatic sequencing within the sampler provides for purging the system, drawing the sample from the flow, sizing the sample, depositing the sample in a storage container, and purging the sampler intake after storage. Means are provided for depositing a predetermined number of samples in each of a plurality of storage containers, or for utilizing a predetermined number of containers for holding each sample, and for de-energizing the sampler until manually attended after a predetermined number of storage containers have received samples. The automatic internal sampler sequencing is initiated by an input signal which is generated by either a flow or time proportional sensor or manual actuation according to control selection.

47 Claims, 14 Drawing Figures

